

ABSTRACT OF THE DISCLOSURE

According to the present invention, at the time of growing a silicon film by liquid epitaxy on a substrate, a bulk portion having substantially no
5 void is formed and then a surface portion having plural protrusions that overhang in a lateral direction is formed. As a result, it is possible to form a silicon film having an uneven structure suitable for increasing optical path length on a
10 surface layer of a semiconductor substrate without performing an additional process for forming an uneven structure. Therefore, it is possible to obtain a semiconductor substrate particularly suitable for a solar cell having an improved short
15 circuit current property at low cost. Accordingly, it is possible to provide a solar cell having high efficiency and being low in price.